

Application No. 10/652,817
Preliminary amendment, January 2006

REMARKS

Telephone interview:

The applicant and his attorney (Henry Blanco White, registration no. 47,530) thank the examiner for the courtesy extended to them at a telephone interview on January 10, 2006.

The wording of specific claims was not discussed, although the discussion is believed to be relevant to independent claims 1, 5, and 14, at least.

It was explained to the examiner that the chip bins of Prough and Johanson are essentially just containers for a pile of chips. The containers are full almost to the top. The surface level 21 is shown in Johanson; the level in Prough will be in front of the level detector 26. In those chip bins, there is some heating of the chips, but only within the pile.

The chip bin of the present invention, in contrast, has only a small pile of chips in the bottom, up to the level detector 85 in Fig. 2. Most of the height of the chip bin is not filled with the pile of chips, but is space within which the chips fall and the chips are subjected to steam treatment as they fall. This treatment process is new, and is not taught by any of the references.

The examiner pointed out that the claims are apparatus claims, and that structural novelty was required.

Applicant's attorney pointed out that all these chip bins have a level detector to control the correct level of chips in the bin. In conventional chip bins such as Johanson's and Prough's, the steam inlets are below the level of chips, and thus below the level detector. Applicant's chip bin has steam inlets above level detector 85.

The examiner requested applicant to file amended claims clearly pointing out this feature in structural terms.

Status of claims:

Following the Amendment After Final Rejection filed on August 8, 2005, claims 1-8, 10-12, 14-25, 27, and 28 are pending in the application. By the present amendment, claims

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27 and 28 are canceled. Claims 1, 5, 10, 14, 22, and 23 are amended. Claims 29 and 30 are new. Claims 1-8, 10-12, 14-25, 29, and 30 are pending after this amendment.

Claims 1, 5, and 14 are amended to state explicitly that there are steam orifices above the level sensor, providing the exact structural difference pointed out at the interview. Support for the amendment is found in Fig. 2 of the drawings and the accompanying description, where steam nozzles 46, 64, 72, 76, 82 are above level sensor 85.

Claim 5 is similarly amended to specify that the baffle is above the level sensor. Support for the amendment is found in baffles 50 in Fig. 2, each of which is above level sensor 85.

Claim 22 is similarly amended to specify that the temperature sensor is below the level sensor. Support for the amendment is found in temperature sensor 106 in Fig. 2, which is below level sensor 85. In order to simplify the wording of claim 22, a control unit has been recited as structure, instead of being implied by functional language. Support for this amendment is found in control unit 110 of Fig. 1.

Some functional language not defining any essential structural limitation has been canceled from claims 1, 5, 10, 14, 22, and 23.

New claims 29 and 30 further limit claims 10 and 23 by specifying that the steam inlets for the vapor curtain are at the outer periphery of the tapered part of the bin. Support for this feature is found in FIG. 2 of the drawings and at least paragraph [0034] of the associated description, where the nozzles 86 that direct steam down the conical bottom 12 are set into the cylindrical body of the bin at the outer periphery of the conical bottom.

No new matter has been added by this amendment.

Remarks:

Independent claims 1, 5, and 14 now recite steam orifices above the level sensor. That is novel over Prough and Johanson, as discussed at the interview. Prough shows the level detector 26 above the highest steam inlet 22. Johanson has a level sensor, see col. 3, lines 20-21. The level detector is not shown in the drawings, but it is detecting the level 21, so there is no reason to doubt that it is where the level 21 is meant to be as shown in Fig. 3. That is above the steam inlets 26. It would not have been obvious to modify Prough or

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Johanson to put the level sensor below the steam inlets, because both Johanson's and Prough's devices are intended to heat the chips in the conventional way, by injecting steam into the pile of chips, and thus below the level sensor. Only in the light of the applicant's novel approach to pre-heating the chips by steaming them as they fall in the space above the pile of chips does it make sense to provide steam nozzles above the level sensor. Steam nozzles above the level sensor, and therefore above the pile of chips are not disclosed and would not work in the Johanson or Prough devices.

Independent claim 22 recites steam orifices above a temperature sensor. Prough has a temperature sensor 25 that dips into the pile of chips from above. Prough's system controls the injected steam so that the rising steam condenses about 5 feet below the level of the chips. Prough's temperature sensor has to measure the temperature 5 feet below the level of the chips. It is a long sensor, because the level of the pile of chips may vary, and its bottom end is 5 feet below the lowest working level of the chips. That sensor still has to detect the condensation of the rising steam, so even at the bottom end 42 the temperature sensor has to be above the steam injector 22. There is no suggestion in Prough of having a steam injector above and a temperature sensor below, as recited in claim 22. In Prough's system, that arrangement just would not work.

Independent claims 10 and 23 are directed to an arrangement with steam nozzles positioned to direct steam down along the surface of the conical bottom of the bin, to prevent or remove bridges and promote reliable flow of the chips out of the bin. Prough and Johanson do not have anything comparable. They both use a Vibra-Bin® or similar, see col. 5, line 13 of Prough, col. 3, line 52 of Johanson, which is a different way of solving the same problem. Prough's steam inlet 22 will not direct steam along the surface of the bottom of the bin, because it is too high up. Prough's steam inlet 28 will not direct steam along the surface of the bottom of the bin, because it is pointing up, not along the surface, and it is actually the supply to the Vibra-Bin. See col. 5, line 5-8. It would not have been obvious to modify Prough to position a steam orifice pointing down along the bottom surface as claimed in claims 10 and 23 until the present inventor had the idea of using a steam curtain

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to prevent bridging. If it had been obvious, Prough and Johanson would not still be using the complicated and expensive Vibra-Bin.

New dependent claims 29 and 30 provide a further structural distinction over the references included in the recent IDS, in which the compressed air inlets projected through the conical surface at the outlet of the flour or cement bin. In the chip bin according to the invention, the structural novelty of positioning the inlets for the steam curtain at the periphery has the functional advantage that the steam curtain inlets also serve as an additional ring of heating steam inlets, to complement the nozzles 96 lower down the cone and the nozzles in the upper part of the bin.

Conclusion:

In view of the foregoing the claims, as amended, are deemed patentable over the site of record and are deemed in condition for immediate allowance. Reconsideration and withdrawal of the examiner's previous rejections and allowance of all of claims 1-8, 10-12, and 14-25 are earnestly solicited.

Respectfully submitted

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